



THOMAS G. NEWMAN,
EDITOR.

Vol. XXII. March 10, 1886. No. 10.



The Australian Bee-Keepers' Journal is the name of a new bee-paper edited by R. L. J. Ellery and J. H. Kitchen, Melbourne, Australia. No. 1 is on our desk; it contains 16 pages, and presents a neat appearance.

"Flowers that Bloom in the Spring."

—A bouquet of blooming flowers from Mr. J. W. Winder, of Louisiana, is on our desk. Among them white clover with stems 12 inches long; several blossoms from Cuba, gathered there on Jan. 26; and several others from Louisiana, gathered on the 1st inst. While everything is frozen up solid here at the North, it is refreshing to think that our Southern brethren are enjoying "the flowers that bloom in the spring." Truly, this is a vast country.

The American Bee Journal is regularly sent to almost every civilized country in the world. It has regular subscribers in England, Ireland, Scotland, Wales, France, Italy, Austria, Germany, Sweden, Norway, Russia, Asia, Africa, Australia, New Zealand, South America, Mexico, Cuba, and all the Provinces of the Dominion of Canada, as well as in every State and Territory of the United States. Advertisers should note this fact when reaching out for business. The AMERICAN BEE JOURNAL offers them inducements which cannot be obtained elsewhere.

Wm. Dyer, of Hastings, Minn., has sent a reversible-frame attachment to our Museum. It consists of a piece of wire of the length of the side-bar of a frame, with each end twisted into a ring, but in opposite directions from each other. The wire is fastened to the centre of the side-bar by little staples, and when the frame is reversed the ring that was under the bottom-bar turns out to form the projection to hang the frame; the one motion turning the projecting end out carries the other under the bottom-bar. It can be made for and attached to any frame in use, by simply cutting off the end-bar, and without disturbing the comb.

Schacht & Lemeke, of San Francisco, Calif., have issued their annual market review of the honey and beeswax business of California, from which we extract this:

The honey crop of 1885, like that of the year before, was not a remunerative one for the producer on this Coast. The reason that the expected improvement in prices did not take place, was partly in the general depression of trade, in the low sugar prices, and in the decrease of the foreign and Eastern demand for our honey, in consequence of a full supply there; but particularly we may attribute the low prices ruling since August, 1884, to the circumstance that a large portion of the crop of 1884 was held over by the producer for a raise in case of a short crop in 1885, or a better demand for the article from any cause. Consequently, the quantity put on the market during 1885 was not small, but larger than could be handled without a larger foreign or Eastern demand.

To Europe very little honey has been exported during the last nine months of 1885 (about 2,000 cases), for the reason that supplies on hand there were full too, and in consequence of a new tariff in Germany, raising the duty on honey from 3 to 30 marks per 100 kilos, since July 1, 1885. Sales to Germany, therefore, stopped entirely since that date, and supplies increased in England, in consequence of the heavy arrivals in the first six months of the past year, and end of 1884. The low prices resulting from these causes have, however, increased a good deal the consumption of this article, both here and abroad.

The supply on the market and in the hands of producers now is not large, particularly of the better grades of liquid honey and comb honey, which are getting scarce; for which reason prices for choice extracted honey and comb honey, the crop of which was especially short in 1885, are a good deal higher than at this time of the previous year.

The estimated quantity in first hands is about 5,500 cases of extracted honey, and 1,200 cases of comb honey; against about 15,000 cases of extracted honey, and 5,000 cases of comb honey, at the close of 1884.

During the last six years, the quantity of honey arriving in this city has been reported as follows: In 1880—3,000,000 lbs. In 1881—1,200,000 lbs. In 1882—1,500,000 lbs. In 1883—1,400,000 lbs. In 1884—3,600,000 lbs. In 1885—2,000,000 lbs.

Up to July 1, 1885, we received about 1,200,000 pounds of honey, and since then the balance of about 800,000 pounds; showing that most of the honey received during the past year was honey of the crop of 1884. Even among the 800,000 pounds received since July 1, 1885, was a good deal of old honey, and we may therefore safely say that if all, or nearly all, the honey of 1884 would have been consumed, sold or exported before the new crop of 1885 came into the markets, we should have had a small supply on hand, and no doubt much better prices during the last season. We estimate the crop of California for 1885 at about 1,250,000 pounds, against nearly 8 times that amount in 1884.

The whole honey crop in the United States for the past year is estimated at about 26,000,000 pounds of honey, and the States of New York, Tennessee, Ohio, North Carolina, Pennsylvania, Kentucky, Illinois and Iowa were the leaders in the honey-producing States—producing, each of them, more than California in 1885; for which reason, prices in the Atlantic States did not encourage shipments from here.

Comb honey has improved a good deal in prices, in consequence of the small yield; and we may mention that a much greater demand in the East, with better prices, could be obtained, if our apiarists would use one-pound sections instead of the two-pound sections. In the East the prices are about two cents higher for comb honey in one-pound sections, and the demand is better for these packages than for California honey in two-pound sections.

The prospects for better prices are not very bright for the next season, especially as it now promises to be a good crop for 1886; but values are now so low for extracted honey that they can hardly go lower; and we even may expect higher prices, should we have a good Eastern and foreign demand, and a general improvement in the trade, which we trust will be the case.

To Double the Postage on fourth-class matter (which includes bees and all kinds of bee-keepers' supplies), the Hon. James F. Wilson, of Iowa, has introduced a bill in Congress. We have written to our Congressman to use his influence to defeat the measure, and he has replied assuring us of his willingness to do so. Prof. Cook says:

"The postage on fourth-class matter is now 16 cents per pound; before 1872 it was only 8 cents per pound; in Canada it is 4 cents now, I think. A Canadian bee-keeper can send a pound of queens or bees to any place in Canada or the United States for 4 cents, while we now pay 16 cents, and possibly may have to pay 32 cents. This matter deserves the immediate attention of all bee-keepers. I have written to our Congressmen, and would urge all others do the same. Few, except the seed-men, would feel this oppression more than bee-keepers.

The proposed increase would make the rate the same as letter postage, and would benefit only the express companies. The Postoffice Department would lose the business, and hence would not be benefited. Every one buying or selling bee-keepers' supplies should immediately write to Congressmen to use their influence to defeat the measure. If any change is made, it should be decreased instead of increased!

Hints concerning Bee-Keeping for March.

—The experience of many bee-keepers, not all novices, is that while they can get their bees through the winter well, the early spring is the most trying time. The life of the worker-bee is short at best, and the great proportion of those that go into winter quarters die before the season is half over. New brood must be reared to maintain the strength of the colonies. It is often fatal to success to start colonies at work rearing brood too soon, which is done when they are placed too early upon the stands before the weather remains continuously propitious. It is better to wait. Colonies coming through the winter very strong may be trusted out earlier than weakly ones. Warm weather will excite the bees to activity; if this occurs unusually early, the colonies should be kept as quiet as possible. When the red buds of the soft maple put forth, the bees, as a rule, may be safely released from their imprisonment. Queens are liable to disease and death, and it happens that sometimes a colony is without a queen. In such a case it may well be united with a weak one that has a queen. If both, after close examination, prove healthy, if honey is exhausted, feed; and it is well to place fine, unbolted rye flour where it is accessible to the bees. They will use it in place of pollen, if few flowers are open or the weather rough.—*American Agriculturist for March.*

New Price-Lists have been received from the following persons:

J. D. Goodrich, East Hardwick, Vt.—2 pages—Bee-Keepers' Supplies.

Iowa Seed Company, Des Moines, Iowa.—16 pages—Seeds.

Andrew Banks, Reisterstown, Md.—48 pages—Chatsworth Herd of Jersey Cattle.

T. L. Von Dorn, Omaha, Nebr.—6 pages—Apiarian Supplies.

Joseph E. Shaver, North River, Va.—1 page—Bee-Keepers' Supplies. [By an oversight this address was given as Pa. instead of Va., in a recent issue.—Ed.]

J. A. Everitt & Co., Watsonstown, Pa.—50 pages—Seeds.

Oliver Foster, Mt. Vernon, Iowa—7 pages—Italian Bees and Queens.

J. W. Clark, Clarksburg, Mo.—16 pages—Apiarian Supplies and Bee-Keepers' Diary.

Any one desiring a copy of either of them, can obtain it by sending a postal card to the address as given above.



WITH

REPLIES by Prominent Apirists.

Getting Ready for the Honey-Flow.

Query, No. 210.—In my locality, bees begin to work with the advent of tag-alder and skunk-cabbage, and we have almost every species of honey-producing plants, shrubs and trees indigenous to the temperate zone, especially black and red raspberries, white clover, basswood, willow-herb, buckwheat, goldenrod, and a profusion of fall honey bloom. Our climate is cold and changeable for the latitude, and more or less of the above fall each year to secrete honey. I want to know when we should have our bees ready to receive the honey-flow, and what particular management including brood-space of the hive will produce the best results, taking the season through. What would likely be the best shape to take the surplus honey in, for profit, comb or extracted?—A. G., Pa.

I think that the safest guide is for every bee-keeper to be the judge of his own locality.—H. R. BOARDMAN.

1. The way you describe it yours is a paradise for bees, so far as a profusion of flowers is concerned. Get the bees strong as soon as possible, and give the queens all the room for breeding that they can utilize. 2. It will depend on your market. Produce both kinds, but be sure and push extracted honey on your home market. It will pay you best by-and-by.—G. W. DEMAREE.

In order to be fully successful, one must know the flora of his locality; when it begins to yield honey, and the duration of yield—then have the bees ready at all times to take care of it. This is the only rule that can be given, as the time will vary in different localities, and sometimes in different seasons in the same locality. "Eternal vigilance is the price of a big crop of honey."—J. E. POND, JR.

From the description I should judge there is no time when there may not be a honey-flow, consequently the bees can hardly be ready any too soon. If there is a continuous yield, the bees will probably get themselves ready; but if there should be any considerable interim, it may be well to feed. The other questions would take a large space to answer, and have been gone over pretty thoroughly in bee-books and papers.—C. C. MILLER.

I have arranged surplusage for both comb and extracted honey, on each and all of my hives, for I find it most profitable to take my light honey in combs, and darker (autumn) grades in liquid form. It pays me to go to this extra expense. After you determine the probable time when field-workers are needed, give plenty of room to breed up a large number of bees to be ready to work at that time; after that, when breeding would not result in bees that would be just the right age at the right time, contract the brood apartment, stopping excessive breeding, and crowd the bees into the surplus department in large numbers.—JAMES HEDDON.

Suppressing Second Swarms.

Query, No. 211.—Having made a swarm from a colony, what is the best method to suppress a second swarm from issuing naturally?—Arthur.

Leave but one queen-cell and give room as needed.—H. D. CUTTING.

Heddon's method of prevention of after-swarms, if carried on carefully and not overdone, is the best.—DADANT & SON.

By occasionally removing a frame of brood and inserting in its place a frame of empty comb or foundation. The remedy is also assisted by using the extractor.—J. P. H. BROWN.

Extract the honey, ventilate the hive well and keep it shaded. Extracting is almost sure. Adding space by giving crates of sections is also an aid, especially if we reverse the combs. The honey is then removed from the frames, which gives the queen room, and swarming is deferred.—A. J. COOK.

If a colony is divided, as soon as it is strong enough, it will probably "swarm." One division does not prevent the bees having their "turn." I should prefer to let the bees swarm once, then prevent after-swarming by the Heddon method.—W. Z. HUTCHINSON.

Influence of Pollen on Honey.

Query, No. 212.—We have cells of honey uncapped for extracting—does the pollen floating in that honey influence its taste or color in any way?—T.

I think it would.—C. C. MILLER.

It never does anything of the kind here. There is not enough pollen in 10 pounds of white clover honey to load ten bees, or one bee to the pound. Honey gathered from large, open flowers, such as pumpkins, melons, etc., may contain pollen more or less, sufficient to give a distinctive flavor, but there is little of such honey gathered here.—G. W. DEMAREE.

Floating pollen in honey frequently affects its taste. Apple-bloom honey nearly always contains pollen in large quantities, not only injuring the flavor, but it also acts like yeast, fermenting and souring the honey.—H. R. BOARDMAN.

Yes. I have said considerable about diarrhea being caused by the bees necessarily consuming pollen that was floating in their honey. It may be that the principal way it gets into the honey is by soaking up and mixing with it in cells where both are stored together.—JAMES HEDDON.

It will depend wholly upon the quantity. Pollen is found to a greater or less extent in nearly all honey. As a rule, not enough is found to injure the flavor, and when so found it should be saved for early stimulative feeding, as the pollen contained therein will urge on brood-rearing at a time when little if any is found in the field. A very small amount of floating pollen might injure the color, when it could not be detected by taste.—J. E. POND, JR.

Stimulative Feeding.

Query, No. 213.—My bees are in the cellar; the temperature is 48° Fahr. When and how shall I feed them to stimulate breeding?—Lucas Co., O.

I do not care to have them "breed" until taken from the cellar.—G. M. DOOLITTLE.

When it is warm enough for them to fly every day. You can feed them in the open air if there are no bees near you.—W. Z. HUTCHINSON.

If you must stimulate them, slightly break the capped honey nearest the cluster. If in deep frames, break the cells on top. If stores are short, feed liquid food.—H. D. CUTTING.

I have found that they do better when they do not breed, and so I would not stimulate them. I think that a warm cellar and plenty of pollen would be the best stimulants, if one wished for breeding.—A. J. COOK.

We would advise you to leave them alone till you take them out. They will breed a little anyhow, but the stimulation of breeding in confinement will lead to disaster. Feed them after removal from the cellar, and only in mild weather.—DADANT & SON.

Introducing Virgin Queens.

Query, No. 214.—Please give the best method of introducing virgin queens to full colonies of bees. Why are they more difficult to introduce than fertile queens?—Ira.

If the virgin queens are "just hatched," they can be introduced by just letting them toddle in among the bees. After they are a few hours old, I cage them in a provisioned cage, and introduce them in the same way that I do fertile queens, watching them until the bees are willing to accept them. Bees have a well grounded prejudice, instinctively of course, against virgin queens of 2 or 3 days old, because they seem to be aware of the fact that a laying queen has a very slim chance for her life when engaged in mortal combat with the keen, active virgin queen. For this reason they keep a jealous eye on her till such time as they despair of relief from queenlessness from any other source.—G. W. DEMAREE.

1. The colony should have been queenless about 24 hours. Run the virgin queen in at the entrance, or any other part of the hive, following her with a light whiff of smoke. Do this as soon as she is hatched. 2. They are not, unless too old; and when the bees would recognize either as a stranger, they seem to favor the best finished job.—JAMES HEDDON.

Any answer to the above, especially the second part, will be largely theoretical. I never introduce virgin queens except as a matter of experiment. I prefer to use ripe cells. In a large apiary this might not be quite convenient, but answers my purpose well. A hopelessly queenless colony will usually accept any queen, if the queen conducts herself as she ought, i.e., calmly and coolly.—J. E. POND, JR.

CORRESPONDENCE

Explanatory.—The figures BEFORE the names indicate the number of years that the person has kept bees. Those AFTER, show the number of colonies the writer had in the previous spring and fall, or fall and spring, as the time of the year may require.

This mark \odot indicates that the apiarist is located near the centre of the State named: δ north of the centre; ϕ south; \odot east; \odot west; and this δ northeast; \odot northwest; \odot southeast; and ϕ southwest of the centre of the State mentioned.

For the American Bee Journal.

Wide Frames with Separators.

16—G. M. DOOLITTLE, (40-95).

For several years there has been quite a cry against wide frames with separators, some even going so far as to predict that they would soon be "things of the past;" but after trying most of the various arrangements which are used to secure honey in sections without them, I am satisfied that there is one at least who will continue to use wide frames and separators, a few years longer at least; for I believe them to be of real value in securing a crop of comb honey in the most marketable shape. While speaking regarding this subject perhaps it might be interesting to some to know something of the past, and how wide frames and separators came into general use.

Years ago, when I first commenced keeping bees, I knew of no box for surplus honey smaller than the 6-pound box as then used on the Langstroth hive. I next saw the Alley or 3-pound box, and afterward the Harbison section, none of which pleased me. I then made a box to hold $2\frac{1}{2}$ pounds, and prepared a hive so these could be placed all around the brood-nest, and at the top, but as I must of necessity glass them before the bees filled them, in order to keep the bees from bulging the combs one into the other, it was rather slow progress which I made. In the winter of 1871-72 I visited Mr. N. N. Betsinger, of Marcellus Station, (a place 11 miles from me), and while there he showed me (as I believe) the first wide frames with tin separators that were ever known, which he had invented a short time previous. As soon as I saw them I said that this was just what I had been looking after for some time, and at once adopted them, the use of which gave me the best of satisfaction.

These wide frames were so arranged that they could be used either at the side of the hive or on top, or both, at the pleasure of the operator. Mr. B. never used them on the tiering-up plan that I know of, yet he might have done so without my knowledge of it. In 1874 I made and used several sets on the tiering-up plan, by making the top and bottom

piece alike and using a part directly on top of the frames and each other, *a la* Tinker, and a part with bee-space between, *a la* Heddon. After a few years' trial I became satisfied that I could not obtain so much honey by this tiering-up plan as I could by using a single tier on top, in connection with side-boxing as I had first planned, before I ever saw a wide frame; so I threw away all of my open-top wide frames and worked entirely on the plan I have given so many times in the BEE JOURNAL.

Prior to 1876 wide frames had only been used containing a single tier of sections, as both Mr. B. and myself used two wide frames with a bee-space between when we wished them two tiers high at the sides of the hive, neither he nor I ever using a two-story hive at that time. In March, 1876, at the request of Mr. A. I. Root, I sent him a set of wide frames as I used them on the standard Gallup hive. Upon receiving it he wrote as follows: "Yours is the nicest box and case I have ever seen, and is the most complete arrangement for comb honey I have any knowledge of. If the plan of the whole is of your own invention, I would suggest that you get them patented." I wrote him that the wide frames (or cases as we then called them) were the invention of N. N. Betsinger, who had not seen fit to patent them. Soon after this Mr. Root came out with his "broad frames" to be used in a two-story hive, and from these sprang the wide frames as they are generally used at the present time.

This using of two tiers of sections in one wide frame is what has caused apiarists to cry out against them, while if only one tier had been used in a frame and these tiered up, those liking the tiering-up plan would not have tried to substitute any other arrangement for wide frames, it seems to me; for I find them better adapted to the securing of surplus honey than anything else, all things considered, especially as they can be made for any size of sections, and used on any size of hive.

Now about making and using wide frames: Get all the pieces out true and square, after which nail them over a true square form. If you wish to use them on the tiering-up plan, make both top and bottom 5-16 of an inch narrower than the ends; if to be used only one tier high, then have the top the thickness of the tin wider than the sides or ends, for the separator is to be nailed on the ends. After using several kinds of material for separators, I prefer tin to anything else. The nailing on of this tin has much to do with our liking or disliking wide frames, for if nailed on loosely, so it can kink and bulge, the operator will become disgusted with them. Mr. Betsinger used to nail on one end of the separator in its proper place, when by means of a weight and pulley attached to the other end of the tin it was drawn tightly when being nailed. Instead of the weight, I used (the first year or so) a hand vise so arranged that I could pry over one end of the wide frame, thus drawing

the tin tight when nailing. While thus working, one day, I noticed that in drawing the tin I often sprung the top and bottom of the frame out or in, as the case might be, and from this I soon had a perfect way of putting on tin tightly every time.

I made a form a trifle shorter than the frame was long, outside measure, this form being perfectly true and square, which gave advantage over the vise method, for with that the frame was sometimes drawn out of true. Next I made a block the size of the inside of the case (except a little shorter), and of the same thickness as the ends to the frame, which was tacked to the form. To use it, I sprung or bent the top and bottom bar of the frame a little, thus shortening it, until it went into the form, when I laid on the tin separator, placing a straight edge on top of the tin and a weight on this. I now had the tin just where I wished it with all bulging taken out of it, when it was nailed fast to the wide frame. Upon removing it from the form, the top and bottom sprung back into place again, thus drawing the separator as tight as a drum-head. I have put on separators in this way for the past 10 years, and like it very much.

I have tried all ways of keying these wide frames together, using them in a clamp, etc., all of which I did not like, as I wished a plan that would allow of my using as few or as many wide frames on a hive as I pleased, from 3 up to 12, according to the strength of the colony, for often with the old plans we are obliged to give too much surplus room to start with. At last (about 4 years ago) I accomplished what I was after by procuring some rubber bands about $\frac{1}{4}$ of an inch wide. These I cut into pieces 3 inches long. To one end I attached a stout string (by means of a slip knot) about 5 inches long, and to the other end one about 18 inches long. The short strings was firmly tied to a nail driven into the end of the board that comes against the outside of the outside wide frame, another being attached to the opposite end of this board in the same way. In each end of the board which goes on the outside of the opposite outside wide frame, is driven a large-headed, steel-wire carpet-tack. This tack is driven in within about 1-32 of an inch of its large head, so that when a string is wound around it a little more than once, it is clamped as securely as if tied. The wide frames are then placed on the hive, 2, 3, 5, 8, or 12, as the colony requires, putting on the outside boards to close all, draw the rubber till a strong tension is made, and wind the string around the tack. In this way the wide frames are held as in a vise, yet they give all the lateral movement required, and can be taken off as one case or separately, tiered-up, inverted, etc.

Borodino, \odot N. Y.

To give away a copy of "Honey as Food and Medicine" to every one who buys a package of honey, will sell almost any quantity of it.

Cedar Valley, Iowa, Convention.

The Cedar Valley Bee-Keepers' Association met at La Porte City, Iowa, on Feb. 17, 1886, and was called to order by the President, C. P. Hunt, of Waterloo.

President Hunt read a selection from the State Horticultural report, which was very interesting.

The Secretary then read a very interesting letter from Dr. Jesse Oren, who is now in Florida, concerning the honey-production of that State. The minutes were then read and approved, after which questions were asked and answered as follows:

Do bees freeze? Mr. J. K. Oren thinks that they do not hibernate, and therefore will freeze. Others had different opinions.

Which is most profitable, comb or extracted honey, all things considered? All would rather produce extracted honey if they could get a ready market for it.

What is the best sized shipping-case for one-pound sections? It was thought that 48-pound cases were the best; some preferred glass fronts, and some without.

What is the best material to use in smokers? Some preferred rotten wood, and some used burlap.

Is it best to use whole sheets of foundation in sections? Mr. L. L. Triem thought it best to use whole sheets, while others thought it best to use only a starter.

The evening session was called to order by the President at 7 p.m.

Which is the best to use in the end of section-case next to sections, glass or wood? It was generally thought that wood was best.

How do bees communicate to each other? By sound and scent.

When is the best time, and how is it best to stimulate in the spring? Feed a syrup after fruit-bloom.

Is it better to feed in the hive or out-of-doors for stimulating in the spring? It is best to feed out-of-doors if not too many neighboring bees near by.

Do bees have a place selected to go to before swarming? They do.

What is the best method to introduce virgin queens? Mr. A. J. Norris drops them in front of the hive and lets them run in at the entrance. L. L. Triem and H. E. Hubbard think it best to introduce in a queen-cage.

The Thursday morning session was called to order by the President at 9 a.m.

What is the best method to stop robbing? Mr. Hubbard practices covering the front of the hive with hay or grass, and then sprinkles with water. Some others exchange places with the colony that is doing the robbing.

How many bees ought to be taken out of the cellar at one time? Mr. C. P. Hunt thought it best to take them out all at once. J. K. Oren and H. E. Hubbard practice taking out $\frac{1}{4}$ or $\frac{1}{2}$ at one time, and at about 3 p.m. on a nice, warm day.

Is it best to shade hives, and if so what is the best shade? Quite a

a difference of opinion was expressed, but a board laid on top of the hive was thought sufficient.

The afternoon session was called to order by the President at 1 p.m.

It was decided that the President appoint a time as soon as convenient before the State convention meets, for the annual meeting of this Association.

What race of bees is best, all things considered, for general use? Mr. J. K. Oren thinks that the Holy-Land bees are the best, and also thinks that the leather-colored Italians are superior to the light-colored Italians as honey-gatherers; but does not like the "business-end" of light hybrids at all; thinks it most too much business.

The Secretary's report was then read and approved.

How far apart should apiaries be? It was generally thought that four or five miles was sufficiently far apart.

How far should the feeder be from the bee-yard to prevent robbing? Twelve or fifteen rods.

How near to each other should bee-hives be placed in the apiary with success? Not closer than 6 feet.

Is it best to move a swarm to its stand as soon as hived, or let it remain where hived? Move it as soon as hived.

It was decided that it is detrimental to the interests of bee-keepers to use whole sheets of foundation in sections.

The President, Vice-President and Secretary were appointed a committee on programme for the next meeting.

The convention then adjourned.

H. E. HUBBARD, Sec.

For the American Bee Journal.

Bee-Keeping in Iowa, etc.

B. F. LITTLE.

The season of 1885 was not as profitable with me in the production of honey as other years. I lost three-fifths of my colonies during the winter and spring of 1884 and 1885, leaving 50 colonies. The white clover flow was very limited, basswood yielded nothing comparatively, and there was no fall flow of honey. I obtained in all about 1,400 pounds of honey, and increased my apiary to 84 colonies by letting them swarm all they would. It is possible that the grasshopper crop may have had something to do with it. The last 3 years the grasshoppers have been on the increase; the honey flow on the decrease. In 1883 my white clover surplus was about 2,200 pounds; in 1884 less than 1,500; and in 1885 less than 1,000.

I am afraid there is some truth in the assertion made by an Iowa bee-keeper, that the winter problem in this northern Iowa climate is the one most of all that needs a solution. Talk about a winter flight! From Dec. 1 to March 25 there has not been one day in 10 years here that bees could fly. I have been here 30 winters, and know for myself. We usually have from 70 to 90 days without even

a thaw on the sunny side of a building. My bee-cellar is 7 feet deep, double-walled from half way down up to the top, lathed and plastered sides and overhead, and a building over it 16x26 feet, which is also lathed and plastered, sheeted and sided. It has double cellar doors, and yet the temperature will go down to 34° above zero ordinarily, and as low as 28° when very cold, unless kept up by artificial heat, which I am using this winter.

I am quite sure that the Bee-Keepers' Union can effect much good in the direction of spending some of its money for the purpose of bringing those to justice who are constantly giving publicity to the notorious falsehoods about manufactured and adulterated comb honey.

The marketing of our honey is another of the unsolved problems—one that is of vital importance. I see no excuse for the present low price of honey as reported from the leading cities, only through the imprudence of crowding the honey into the large cities, and leaving country towns without any, thus bringing the whole crop to the price of gorged markets.

Brush Creek, 6 Iowa.

For the American Bee Journal.

My Experiments in Wintering Bees.

JAMES HEDDON.

I had thought that I would not write again upon this subject until next May, but in consideration of the facts that I am experimenting quite extensively, and the subject is a momentous one—one so very intimately connected with our success or failure, its intermediate discussion and report will not be uninteresting.

My Glenwood Apiary, of 150 colonies, all in my 8-frame Langstroth hives, were all worked for extracted honey during the past season. Owing to the unprecedentedly cold August, our late surplus crop was very nearly a failure, consequently these colonies managed for extracted honey, nearly all lacked sufficient stores for winter.

Believing that cane-sugar is a better winter food for bees than honey, and having no trouble in disposing of my honey at 7 to 8 cents per pound, and being able to manufacture pure cane-sugar syrup at a little less than those figures, I fed nearly every colony from 5 to 15 pounds of the syrup, which they added to the stores which they already possessed.

I had no fears of any bee-bread that the combs might contain, as long as the temperature was kept above that point which forces the bees to exertion, in order to be comfortable; and that temperature I determined to maintain.

I had no bee-cellar there, but a house-apiary 12x48 feet, and 7 feet high; the ceiling covered with sawdust, and the walls filled with the same. In this building I partitioned off a room 11x18 feet, where I piled the whole 150 colonies, occupying nearly all the room. The partition is

also a filled wall containing tight-fitting doors.

As I live 6 miles from Glenwood I doubted my ability of controlling the temperature of the bee-house. I will describe how I have done it so far. The walls are rather thin, and having no heat to depend upon except that produced by the bees (which is slight when a quiet, healthful condition is maintained), I decided to test the ventilation question, and depend upon tightly-closing the room for the maintenance of a temperature no less than 45° during our coldest weather. That temperature has been maintained during the protracted cold, and although at one time this room was for over three weeks closed as tightly as good carpenter-work and packing could make it, yet (notwithstanding the large number of bees for the size of the room) no uneasiness nor signs of disease have resulted. The bees always have been very quiet.

Although we have had some severe weather, there has been several protracted warm periods during the present winter, and notwithstanding this room has been tightly closed, the temperature has not been above 50°, and the bees have not been uneasy. The entrances to the hives are wide open, but the tops are tightly sealed. I doubt if this same regularity in temperature and quietude would have existed had there been no sugar syrup in the hives (all other conditions being the same,) with natural stores in its place. Bees seem to maintain greater quietude when their stores are of sugar syrup.

I have 300 colonies here in two cellars, and during all the cold periods these cellars have been "hermetically sealed," as it were, and the same apparently healthy condition exists. The few colonies that I have examined are in the much desired "quiescent" state, which Mr. Clarke has chosen to call "hibernation."

Here my experiments are conducted differently. I have quite a number of colonies all wintering upon cane-sugar syrup with no honey or bee-bread in the hives; many more are on all natural stores; besides other experiments that I am making.

While I believe that all my colonies will winter well, past experience compels the belief that those consuming nothing but sugar syrup will void nothing on their first flight, while those consuming honey will void a thin, yellow excrement which the microscope will show to be composed of pollen-grains and water. As I have previously stated, I believe that bees never touch bee-bread when the temperature is kept above that point which induces exertion; but that they do of necessity consume pollen if such pollen is floating in the honey which they eat. This much I know: Bees may pass a 5 months' confinement on sugar stores only, and accumulate no fecal matter. I have never seen my bees fly, even after two months confinement, upon natural stores, without discharging more or less of these accumulations, the solid substance of which I believe always to be composed of pollen-grains.

Whether or not all our minor conclusions are correct, I am confident that all may now unitedly say that "our great enemy is conquered, and the wintering problem is practically solved." No doubt we have yet more to learn regarding some of the less important laws—a knowledge of which will aid us in accomplishing our purpose in the simplest and cheapest manner—but I no longer doubt that practical success in wintering bees depends upon proper food and temperature.

Dowagiac, 9 Mich., Feb. 15, 1886.

Oneida County, N. Y., Convention.

A meeting of the Oneida County, N. Y., Bee-Keepers' Association was held at Rome, N. Y., on Feb. 24, 1886. The attendance was large. Secretary O. J. Evans being absent, W. E. Clark, of Oriskany, was appointed Secretary *pro tem*.

Chairman Bacon said that bee-culture was quite a business. It had become an element in the business interests of the country. He said that he had intended preparing a paper on marketing honey, but as that question was made prominent before the late State Convention at Rochester, and as the chairman of that convention was present, he could present the matter much better. He then called on W. E. Clark, of Oriskany.

Mr. Clark said that the subject of marketing honey was the most prominent before the convention. It had been decided to send a committee-man to Thurber's, in New York, where the resources for selling honey are five times as large as any other place in the United States, and see if they would not put a practical honeyman at the head of their department. Honey must be produced so as to be sold cheaper in order that it may compete with other sweets. It should compete with cane-sugar, that it may be more extensively used for table purposes. There seems to be an impression that old women, broken down men, and those who have been unsuccessful in almost every other business can conduct a bee-business. This is all wrong. It is hard work to do it properly, and requires strong men. There are too many middlemen between the producer and the consumer. He had known honey to be bought at 11 cents and sold as high as 30 cents per pound. We must get rid of these middle parties, then honey will be cheaper and more generally used.

At this point Secretary Evans arrived and read the proceedings of the last meeting.

Mr. Bacon said that when he stated at the last meeting that his bees only consumed from 5 to 10 pounds of honey in wintering, it was only for the time that they were shut in—about 120 days.

M. D. Parkhurst, of Boonville, said that he kept his bees in the cellar with the temperature at about 35°, and that they consumed from 18 to 24 pounds of honey. If it was warmer

they would be livelier and consume more.

Mr. Clark continued: It is a good idea to dispose of honey at home, by peddling it around. When people come to your place try and sell them some honey. Why, some time ago the tax-gatherer came to my house, and before he went away I had a 10-pound pail of honey sold to him. Honey is at present a drug in the market, on account of hard times. In selling it at home you get accustomed to using it. There is one thing that is injuring the business, and particularly prices, and that is the custom of farmers who produce a little honey, coming in and exchanging it for groceries. They do not get what it is worth, but they establish a price and then it is hard for us to sell our article for its value.

Mr. Smith, of Chittenango, urged the producers to stand by each other and keep prices where they belong.

At the afternoon session the question of frames was taken up. Mr. Smith said that no one could tell what frame was the best to use. Locality is a question to be considered in this connection. He uses a 9x14-inch frame. The question is a broad one, and will bear much study.

Secretary Evans said that the size of the frame for extracting should be in accordance with the size of the sections. We should avoid extremes in the matter of frames.

W. E. Clark said he did not believe that they could agree upon any one size of frame.

The question of comb foundation was brought up and discussed.

Secretary Jones said that too heavy foundation should not be used, as the bees cannot draw it out properly.

Mr. Clark said that sometimes foundation is put in too early. If the foundation is heavy it will not be drawn out. He recommended the thin foundation.

Mr. Warriner said that he had found that the thinner he could use the foundation and retain the side-walls the better.

Mr. Smith said that a yellow foundation could be bleached white in the sun, but it became hardened at the same time.

Mr. Clark said that wax bleached was hard and not satisfactory. Use yellow wax in preference to bleached.

Mr. Smith read an interesting essay on the production of comb honey.

President Bacon suggested that, as one day was too short a time in which to transact the necessary business, subsequent meetings be held for two days.

It was decided that meetings be held semi-annually for two days each, and that the next meeting be held in Utica, N. Y.; all subsequent meetings alternately in Rome and Utica.

A committee of three was appointed to answer such questions at the next meeting that may be submitted in the meantime. The committee is Messrs. Clark, of Oriskany, Evans, of Camroden, and Smith, of Chittenango.

The committee appointed at the last meeting to confer with the

Oneida County Agricultural Society in reference to making exhibits of honey at the County Fair, asked for an extension of time, which was granted.

For the American Bee Journal.

Feeding Sugar--Reversible Hives.

W. Z. HUTCHINSON.

First allow me to thank Mr. Dadant for his frankness as shown on page 75; next, please allow me to explain that those who force the honey into the surplus receptacles by "contracting, reversing, or by using small hives," have no intention of feeding back again to the bees the honey that has been forced into the surplus receptacles, but expect to replace it with the cheaper and safer food, cane-sugar; or, if they find that some particular kind of honey is safe for winter stores, the "contracting, reversing, and small hive" method will enable them to choose this particular kind of stores for winter. This method does not compel us to feed, but enables us to do so if we wish without first extracting the honey from the brood-combs.

Considerable is now being said against the use of sugar for winter stores. The low price of honey has been attributed to this practice. Some have accused it of being the foundation upon which has been built the sensational stories in regard to adulteration; and those who have practiced it have been accused of building up the sugar trade at the expense of the honey market. When our commission merchants quote low prices, I believe they never mention this as a reason—it is always "owing to several carload lots from California," or something of this kind that is given as a reason for low prices. If no more sugar should be used for winter stores, or fed for any purpose, for 20 years, these same stories would live and be repeated. The truth of the matter is, that when small brood-nests are used and the bees given but little more honey than enough to last them until honey can be gathered in the spring, there will be practically none of it left by the time of the commencement of the white clover harvest, which is about the first from which we secure a surplus.

The talk about "building up the sugar market," even if there were any objection to so doing, is all "bosh." The sugar fed to bees is not even a drop in the bucket so far as the sugar market is concerned. That the practice puts more honey upon the market is a more reasonable idea, but it falls upon a deaf ear when told to the man who would have no honey to sell at any price unless he winters his bees; and can only succeed in so doing by feeding them sugar for winter stores. We may argue as long as we please, and bring forth the best of arguments, yet our arguments will be useless, if the bee-keepers who now lose their bees during winter learn that they can winter them successfully by substituting sugar for natural

stores; and when they come to this decision they will welcome the hive and system that will enable them to bring out the bees in the fall in nearly a starvation condition, and it will only be necessary to put on the feeders and feed, the work being done in a few hours.

THE NEW REVERSIBLE HIVE.

I would like to say a few words in reply to Mr. Alves' questions concerning the new reversible hive, on page 72:

1. There is no more machinery about the Heddon hive than about an ordinary one, except the thumb-screws, and these are fast and seldom used.

2. Yes, it does require exact work in manufacturing, but this is made up many, many times when we once get them right and begin manipulating them.

3. Four dollars is only the price of a single sample hive; they can, of course, be made much cheaper in large quantities. If a high priced implement enables us to dispense with labor to a sufficient extent, it is profitable.

4. Mr. Heddon's principle can be used with two shallow Langstroth hives, and the advantage of interchangeableness will be secured, but the advantage of reversing each section is lost; as well as some of the advantages of manipulating hives instead of frames.

Criticisms from Mr. Alves are always valuable, because he appears fair, and willing to accept the truth.

Mr. Demaree, in his article on page 102, claims to have used sectional brood-chambers for some time past; and as proof, refers to his articles in several defunct bee-papers, and also in the AMERICAN BEE JOURNAL. With the exception of the AMERICAN BEE JOURNAL he mentions no pages. Will Mr. D. please state the pages and volumes where he has mentioned using a hive the brood-nest of which is, or can be, divided into sections longitudinally; or, better still, quote some of the passages bearing upon the subject, as many of us may not have files of the papers mentioned. The article on pages 370 and 371 of the AMERICAN BEE JOURNAL, Vol. XIX, shows conclusively that Mr. Demaree used the ordinary Langstroth frame in the brood-chamber, and that the shallow combs were used in the supers only for securing extracted honey. Mr. Heddon does not claim to have originated the idea of "tiering-up" hives, but of "tiering-up" brood-chambers; and although he has no patent upon this, he does claim that, whether "prior" as an inventor of this process or not, he was original in its discovery and use, and the first to make it public, clothed in practical shape, and presented as a system of management, after testing and finding it good. Mr. D. may have accidentally gotten his queen and brood into one of these shallow supers, or he may have put them there purposely, and is now wintering them there, but it amounts to nothing; as everybody knows that whoever used or did not use a two-story brood-

chamber, Mr. Heddon was the first to place the idea before the public. It is now a year since I knew of Mr. Heddon's new hive, and I have used them one season; all this time I have watched closely to see if the same idea was advanced by any one else. I have watched in vain.

Mr. D. says: "When we have a swarm in the lower story or brood-department (?) (italics are mine) of a hive, we call it a 'hive'; when we add another story to it to give the bees more room, we still call it a hive, because it is a hive in sectional parts. Now the mere difference in the depth of the sectional parts can never change an old idea into a new one." Why does Mr. D. apply the term brood-chamber to the lower story? Because it is the brood-chamber, and the upper story is not added for brood but for surplus; and the idea of making this brood-chamber in longitudinally sectional parts that can be interchanged at will, is original with Mr. Heddon, and was first published by him.

Mr. Demaree attempts to defame the hive by saying the case is simply a shallow box, etc. In so doing he inadvertently praises it. Its "simplicity" is really wonderful, considering how much can be done with it. Mr. Alves is respectfully referred, for an answer to his first query, to paragraph 5 of Mr. Demaree's article.

Mr. Demaree further says: "It is proper to say that the frames are adjusted in the case, so as to leave a shallow bee-space both at the top and bottom of them, and the case will work either side up or down;" and he dismisses this grandest of all the grand features of the hive with, "comment is unnecessary." Perhaps he meant that it would be unwise, for there can be no imaginary question as to the newness of thus arranging frames so as to have the bee-space on either side, or divided between both at will.

When reading the paragraph in regard to the use of thumb-screws, which ends with, "No device is more commonly used than a 'set-screw,'" I could not help exclaiming, "Why didn't he say, Mr. Heddon's hive is made of wood, and no material is more common out of which to make hives?"

Please allow me to relate an incident: Last week, at Adrian, Mich., I had the unexpected pleasure of meeting Dr. A. B. Mason, of Toledo, O. Not having read "Success in Bee-Culture," he did not exactly understand how Mr. Heddon's hive was made, and questioned me concerning it. As one feature after another was explained, his genial face lighted up as a face will only when its owner is hearing pleasant news; and his tongue belied not his face when it said: "Is that so?" "That's it, that's it." "Well, well!" or similar expressions. It was new to the Doctor. Now, when a man like Dr. Mason, who reads the bee-papers, attends conventions and fairs, and is a practical, well-posted bee-keeper, learns of the features of this hive with a burst of pleased surprise; when such men as Wm. F. Clarke

pronounce it as "revolutionizing," Thos. G. Newman as "new and original," and when A. I. Root and D. A. Jones consider it patentable, it ill becomes an "independent" writer to apply such terms as "old idea," "common property," "old acquaintance," etc.

Father Langstroth gave us the movable frame, and Mr. Heddon now gives us the movable hive, *i. e.*, by means of his hive and system of management, we can run our apiaries almost entirely by manipulating hives instead of frames; it is a grand step, and its progress over the land will not be stayed by a few unproven assertions.

Rogersville, 6 Mich.

For the American Bee Journal.

Selling Extracted Honey.

M. M. BALDRIDGE.

The editor, knowing me to have had considerable experience for a term of years in handling extracted honey as a specialty, and successfully, desires me to answer the following queries:

"Will some one having experience please answer the following questions through the AMERICAN BEE JOURNAL? 1. Do those who practice selling extracted honey in small cans still find a growing demand for it in the same towns in which they formerly sold it? 2. What size packages do they use?—North Freedom, Wis."

1. My experience in selling extracted honey is directly to consumers, and not, under any circumstances, to retailers. When I supply a town, village or city, I visit every family in it with a true sample of the honey that I propose to deliver, for the purpose of securing orders for the quantity desired. In no case do I take an order for less than 5 pounds, nor more than 20 pounds. No family is omitted—no matter how poor nor how rich, nor whether they be white or black—and the price to all is the same under all circumstances. When the orders are secured I then deliver the honey and collect the pay—unless I agree, when the order is taken, to wait for it until a specified date.

As a rule, the first time a town is properly canvassed more honey will be taken than at any one time afterward, for the simple reasons that many will buy who are not lovers of honey, but wish to have some in the house for sickness, or for the novelty of it, or perhaps because their neighbors are buying! No matter how good the quality of your honey may be, there is in every town plenty of people who do not relish the article, and never will. After supplying a town the second time, the sale of honey from year to year will be quite uniform, provided the same is "gilt-edged." I have now in mind one city that I have supplied regularly for the past twelve years, and my sales the past year have been as good and as satisfactory as during any one of those years. The great secret of my success

perhaps is that I never sell a poor quality of honey.

2. I use only one size of package, and that is a common 2-quart tin-pail with a loose cover, which holds 5 pounds of thick liquid honey, net weight. When I deliver the honey the consumer can keep the pail or empty it as may be desired. If the pails are emptied and returned to me at the time of delivery, I deduct 10 cents for each pail. I find that most of my customers prefer to empty the pails and keep the honey in glass fruit-jars.

St. Charles, 3 Ills.

For the American Bee Journal.

Bees as Fertilizers of Flowers.

J. F. LATHAM.

On page 6, Mr. G. M. Doolittle quotes two paragraphs from a paper which he "chanced to pick up," and makes the ideas embodied therein the subjects for the comments contained in his article.

As Mr. D's quotations are too cramped to be illustrative of the whole of the article from which the quotations were made, it seems not improper, for the "first author" quoted, to direct his attention to pages 260 and 261 of Vol. XIX of the AMERICAN BEE JOURNAL, where he will find the subject more broadly treated. If I rightly construe the gist of Mr. D's critique, a fair digest of the whole of the article from which his quotation was copied, would illuminate any doubt, *pro* or *con*, having direct reference to the actual agencies which aid the fecundation of the melliferous flora, or flowers which are not nectar-producing; and thus relieve an apparent misapprehension. The second quotation in Mr. D's article (for which I have no further use), was quoted "second hand," the explanatory purport of which I, like Mr. Doolittle, am not inclined to endorse. That the flowers of many species of the vegetable world do not require insect aid in the process of fecundation is evident; and that any species of the melliferous flora is absolutely dependent upon the insect tribes for their fecundation, I am not prepared to accept as an axiom from which deductions may be drawn, that harmonize with the principles of sympathetic reproduction as unfolded in cosmogony.

At the commencement of the first paragraph on page 7, Mr. Doolittle records another slight mistake in asserting "that he (myself) represents that both the breeze and the bees may be needed to fertilize the same and all plants." Such is not the sense of the quotation. The phrase, "may be needed," is not in the sentence quoted, neither does it embody the idea that all or even any flower actually demands the aid of the breeze or insects to complete the designs of nature in its cosmic capacity, so to speak. If my authority, and my deductions therefrom are correct, flowering plants existed on our globe many epochs prior to the devel-

opment of an animal organism capable of winging its way from "flower to flower," and accelerating the increase of vegetation by insect "fertilization."

According to Dr. Hitchcock's arrangement of the different animal and vegetable species, in the order of their development, geologically, flowering plants existed on the land during the latter part of the Salurian and Cambrian periods, when no animal life except that inhabiting the water existed (or, in fact, could exist); while the sub-order, hymenoptera, to which the honey-bee belongs, did not make their appearance until the latter part of the Tertiary period. Such being the premises, it is evident that the luxurious growth of flowering vegetation, which matured and decayed during the limitless evolutionary epochs intervening the two periods mentioned, especially during the Carboniferous period, must have depended upon other agencies than those of the honey-bee, or other nectar-feeding insects, for their "fertilization," as the earlier insects seem to have been allied to the Aphid family.

That the flowering plants, which evolved their organism contemporary with that of the nectar-subsisting insects are dependent upon those insects, to a greater or less degree, through sympathetic sources, for their perfect fecundation, does not appear improbable; in fact, the influences pertaining to the development of cosmic matter in all its organic forms, tend to support such a theory, and confirm the idea of nature's "prime method" of distributing the fecundating element.

As Mr. Doolittle says in his concluding paragraph, "Let us have the scientific" part, from those qualified to impart it.

Cumberland, 9 Maine.

For the American Bee Journal.

Sectional Brood-Chamber Hives.

DR. G. L. TINKER.

The extensive discussion during the past year in the bee-papers, on the methods and the advantages of reversing brood-combs, as well as the result of the trials, has proved that there is no profit in reversing single combs, because of the great labor required, and that there is no advantage to be gained from the practice. Like many discussions on other subjects, the truth is made to appear, although, as in this case, the truth that we had sought—the germ of wheat sifted from all the chaff—is quite unlike what we had been seeking or had anticipated.

It is no new idea, by any means, that the getting of the brood close up to the sections in working for comb honey is a measure of great value. As the outcome of all the invention and discussion we have discovered perhaps all of the measures by which brood can be brought near the sections, so that we can now point out the one plan most practicable and valuable. Here I wish to say that no

one man is entitled to all the credit of the discoveries made, because all or nearly all bee-keepers have had a part in making them, and have prepared the fraternity at large for an innovation in our methods, that without this preparation of the apicultural mind would have been impossible. The credit, I am bold to assert, is due rather to the great fraternity of bee-keepers who, through their united labors, have not only made discovery possible, but now make the introduction of the new appliances and methods certain. As the matter stands, one bee-keeper is as much entitled to the benefits as another, and I trust and believe that all will look upon it in this light, and hesitate not by virtue of a just right to adopt the improved methods as soon as convenience will warrant, and the revolution in the construction of brood-chambers and in our methods of management will demand.

But first, what is the most practical and advantageous method of disposing the brood near the sections, at will? Beyond question it is the proper management of the shallow sectional brood-chamber! Has it any disadvantages? I assert fearlessly that it has not, neither in wintering, the laying of the queen, or in the manipulation of hives or combs!

Until about 5 years ago, a hive, the brood-chamber of which was in three shallow sections, each $5\frac{1}{4}$ inches deep by 12x16 inches inside, has been in this town and contained bees uninterrupted for 30 years. The colony in its thin walls of walnut had resisted the cold and the buffeting of storms for 30 winters, and it at last succumbed to the depredation of robber bees that gained entrance by its many rotten corners. It had always done well, was generally on hand with a rousing swarm in season, and besides stored a liberal surplus for its owner. When Father Langstroth, a few years since, recommended a thin walled hive for out-door wintering, I was quickly reminded of this old hive. (The pannels in the sides of each of the cases were not over $\frac{1}{4}$ -inch thick.) That it had not been manipulated on the modern plan of tiering-up the cases and the placing of the brood next to the super, was no fault of the hive. The combs were attached to top-bars in each case on the Dzierzon plan.

REVERSING HIVES.

In a shallow sectional brood-chamber I believe that there is no advantage whatever to be derived from reversing its sectional parts. The placing of the brood next the super, and any honey that may be in the upper case below the brood, will accomplish all that can be done. I shall therefore have no use for a reversible hive. Again, as we shall not have occasion to handle the frames very much, but the sectional parts instead, it will not be greatly to our advantage to have the frames as readily movable as are Langstroth frames. On this account a very simple case is all that is necessary to hold the frames—a case without ornamentation, clamps, screens, or anything of the kind. Neither do

we want a complicated bottom-board, but all the parts of a practical hive of this nature should be, and will be made only of a few parts, and all very plain and easy of construction. The frames can be supported in the sectional case on strips of sheet-iron cut 5-16 of an inch wide and as long as the case is wide inside, the strips to be inserted in thin saw-cuts made 5-16 of an inch from the inside lower edges of the ends of the case and to enter the wood only 3-16 of an inch. This construction will give a proper bee-space under the frames which should extend to the top of the case. The width of the end-pieces of the frames should be $1\frac{1}{8}$ inches, and the thickness $\frac{1}{4}$ of an inch, making a closed-end frame to rest on the sheet-iron strips. The width of the top and bottom bars should be the same, and may be $\frac{3}{4} \times \frac{1}{4}$ inch in thickness.

Here let me call the attention of bee-keepers to the comparative cheapness of these frames, if dovetailed at the corners, to those in common use. They need no nails, and a set of 14 for one hive can be put together in a few minutes; and as they can easily be made with great accuracy, they will always fit nicely in the cases. The length of the frame might well correspond with the $4\frac{1}{4} \times 4\frac{1}{4}$ sections now so popular. The outside would therefore be 17 inches long, and if made just 5 inches deep, it will just take one-half of a sheet of foundation cut the regular size for the Langstroth frame. The frames can be taken out of the cases very readily, since, being very shallow, the cases can be set on end and the frames pushed through, one or more at a time. Hence, the worthlessness of all clamps to hold the frames will be apparent.

Again, if we are to handle hives rather than frames, I can see no advantage in having so many frames in each sectional case. I think that we will find 7 enough, though many may prefer 8 or 9 frames to the case. It will be then very light to handle, but to further lighten it I would make the sides only $\frac{3}{8}$ of an inch thick and the ends $\frac{1}{2}$, and make the usual hand-holes in the ends or nail cleats across the ends a little above the middle line to handle them by.

The bottom-board I would make out of $\frac{1}{2}$ -inch stuff, with a cleat of 6-inch stuff across each end, the rear piece to be 2 inches wide and the front piece 5 inches; the board to be cut $1\frac{1}{8}$ inches shorter than the hive is long, and the wide cleat nailed across 2 inches from the end. This would give an entrance of $\frac{1}{2}$ inch across the front. If blocks are nailed on each side to go under the front corners of the hive, ordinary entrance blocks can then be used.

Sectional hives containing only 7 or 8 frames in each section will be so light that we will find it an easy task to carry them back and forth from cellars in wintering, where the bees can be placed under our full control and wintered in a scientific manner, which we shall never be able to do in out-door wintering where we cannot regulate the temperature at will. Only one of the sectional cases, well filled,

will be necessary for each colony for the winter.

To operate a sectional hive of shallow frames successfully, we shall need a honey-board with strips of perforated-zinc set in thin saw-cuts made in the edges of the slats composing the board. This construction and use of perforated-zinc is my invention, but it is free to all to use. As any kind of a sectional-case or super can be adjusted to this hive every bee-keeper will be expected to use his favorite.

The capacity of two of the sectional brood-chambers will about equal the 8-frame Langstroth hive, but many would prefer to use three of the parts in building up colonies for the honey harvest. The frames alone are made to reverse, but we will need to reverse them but once, and that simply to get the frames filled out with comb plump to the sides all around. Ordinary 6-inch boards can be split and dressed to $\frac{3}{8}$ of an inch for the sides of the cases, and we shall have no trouble to get whole boards wide enough for the bottoms and covers and yet there will be ample room for top-storing on the hive. For a very cheap hive we will never get a cheaper, and a better hive for large results may not be possible. It will hardly be necessary to add in conclusion that this hive is not patented or patentable except in one or two features, which are my inventions, and are hereby freely given to the public.

New Philadelphia, O., Feb. 7, 1886.

OUR CLUBBING LIST.

We supply the *American Bee Journal* one year, and any of the following publications, at the prices quoted in the last column of figures. The first column gives the regular price of both. All postage prepaid.

	Price of both.	Club
The American Bee Journal	.....1 00..	
and Gleanings in Bee-Culture	.....2 00..	1 75
Bee-Keepers' Magazine	.....2 00..	1 75
Bee-Keepers' Guide	.....1 50..	1 40
The Apiculturist	.....2 00..	1 75
Canadian Bee Journal	.....2 00..	1 75
Texas Bee Journal	.....2 00..	1 75
The 7 above-named papers	.....6 50..	5 50
and City and Country	.....2 00..	1 50
New York Independent	.....4 00..	3 30
American Agriculturist	.....2 50..	2 25
American Poultry Journal	.....2 25..	1 75
Journal of Carp Culture	.....1 50..	1 40
and Cook's Manual	.....2 25..	2 00
Bees and Honey (Newman)	.....2 00..	1 75
Binder for Am. Bee Journal	.....1 75..	1 60
Apiary Register—100 colonies	.....2 25..	2 00
Dzierzon's Bee-Book (cloth)	.....3 00..	2 00
Dzierzon's Bee-Book (paper)	.....2 50..	2 00
Quinby's New Bee-Keeping	.....2 50..	2 25
Langstroth's Standard Work	.....3 00..	2 75
Root's A B C of Bee-Culture	.....2 25..	2 10
Alley's Queen-Rearing	.....2 50..	2 25
Farmer's Account Book	.....4 00..	3 00
Guide and Hand-Book	.....1 50..	1 30
Heddon's book, "Success,"	.....1 50..	1 40

When Renewing your subscription please try to get your neighbor who keeps bees to join with you in taking the *BEE JOURNAL*. It is now so cheap that no one can afford to do without it. We will present a **Binder** for the *BEE JOURNAL* to any one sending us four subscriptions—with \$4.00—direct to this office. It will pay any one to devote a few hours, to get subscribers.

Local Convention Directory.

Time and place of Meeting.
 1886.
 Mar. 30.—Patsalaga, at Arcadia, Ala.
 M. G. Ruzhto, Sec., Half Branch, Ala.
 Apr. 10.—Union, at Dexter, Iowa.
 M. E. Darby, Sec., Dexter, Iowa.
 Apr. 27.—Des Moines County, at Burlington, Iowa.
 Jno. Nau, Sec., Middletown, Iowa.
 Apr. 30.—Western, at Kansas City, Mo.
 P. Baldwin, Sec., Independence, Mo.
 May 5, 6.—Texas State, at McKinney, Tex.
 B. F. Carroll, Sec., Dresden, Tex.
 Oct. 19, 20.—Illinois Central, at Mt. Sterling, Ills.
 J. M. Hambaugh, Sec., Spring, Ills.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of time and place of future meetings.—Ed.

SELECTIONS FROM OUR LETTER BOX

Good Prospect for Honey.—8—Jno. C. Gilliland, (7-16), Bloomfield, ♀ Ind., on Feb. 24, 1886, says :

My bees have wintered well, only one colony lost. To-day they carried in pollen lively. There has been very little loss of bees in this county this winter, and the prospect is good for the honey yield next season.

Bees Doing Well.—L. Highbarger, Adeline, ♂ Ills., on March 2, 1886, writes :

Bees are doing much better than they did at this time last year. So far I have been unable to discover any signs of diarrhea; but at this time last year they were badly diseased. The reason for this is that they have a better quality of honey to winter on. Whenever our bees have honey-dew for winter stores we can expect to meet with losses.

Feeding Sugar Syrup.—W. J. Dawson, Dickson's X Roads, ♂ La., asks this question :

Why do bee-keepers use sugar for feeding when honey is quoted at $3\frac{1}{2}$ to 4 cents per pound ?

[The only reason which can be given, is that some prefer it for winter use, even if it is dearer.—Ed.]

Bees Wintering Well.—27—F. A. Snell, (70-100), Milledgeville, ♀ Ills., on Feb. 25, 1886, says :

I commenced on June 1, 1885, with 70 colonies of Italian bees; during June I sold 5 colonies. I secured 4,000 pounds of surplus honey. On Nov. 18, 1885, I put 100 colonies into winter quarters in good condition. Late in May, 1886, I reported 105 colonies, but by June 1 I had disposed of the 35 colonies, thus leaving me 70 with which to begin the season for surplus. About one-tenth of my bees were worked for queen-rearing. My bees are wintering well so far.

Bees Working on the Elms.—B. F. Carroll, Dresden, ♂ Texas, on Feb. 25, 1886, writes :

The bees began work on the elm bloom on Feb. 8, and 10 days since they have gathered a nice lot of pollen and honey. The weather is very fine for bees and farmers, and both are busy. Corn planting is going on briskly. Bees have wintered well after our first zero weather ever felt here. I hope this may be a prosperous year to all apiarists.

How Larval Bees Eat.—B. J. Bailie, Sarnia, Canada, says :

I understand that Mr. J. Rutherford, of Scranton, Pa., claims to have discovered that larval bees live by absorption (osmotic action), and that they are not fed as our bee-books would have us to understand. I wish to know who was the first to discover this fact.

[This is a well known fact. It is not confined to larval bees, but is also true of many maggots, and nearly all entozoa. The tape-worms have no mouth, nor alimentary canal, and so of course they have no other way to secure nourishment. When insects or worms are bathed in liquid aliment, this is the common or usual method of securing the nutritious material. Some of our worst insect pests live wholly by imbibition, or by receiving food through osmosis. The Hessian-fly maggot is an example. It is impossible to say who was the first to discover this fact.—A. J. Cook.]

Bees in the Cellar.—Noah Field, Spencer, ♀ N. Y., on March 1, 1886, says :

We are having a cold spell now. My bees are in the cellar, and they appear to be doing well at present. I have one most excellent colony that has not had a dozen dead bees in its hive this winter, and I think that it has over 100 pounds of honey in the hive. I suppose if some bee-men had it they would make 4 or 5 colonies out of it. I think that the BEE JOURNAL contains so many good articles. I can hardly wait for each number to reach me.

Wintering Bees—Old Foundation.—J. M. A. Miller, Galva, ♀ Ills., on Feb. 25, 1886, writes :

I have just examined my 28 colonies of bees that are in the cellar, and I find them seemingly to be in a state of quietude that indicates comfort. They were put into the cellar about Nov. 25, the hives being placed on 2x4 inch scantling set edgewise upon blocks 8 inches thick, with the entrances all open, and no extra preparation of chaff, quilts, or blocks, etc., but they are simply in a dry cellar with some cloths over them that were on during the summer, and the covers

are on the same as in summer. I think that I never have seen bees in better condition, not a pint of dead bees being on the cellar bottom. Why is it that if bees do so much better on the summer stands in chaff hives, we so often see this expression, or a similar one? "My bees are on the summer stands in chaff hives, except a few weak ones that I put in the cellar." If the chaff hive is so nice, and so much better than the cellar, why not put the few weak ones on the summer stands, and the strong ones in the cellar? I sell all of my honey in my home market, and I have no trouble in selling it. My trouble has been for two years past to produce enough to supply the demand. About 80 per cent. of all the bees in this vicinity died last spring during the cold, May storms. I lost 35 colonies. There was no brood in the hives, and the old bees died. I have a quantity of foundation that is two years old. Will it pay to have it worked over? or will it do to use it as it is? It seems to me that the bees would take to it better if it was fresh.

[You can freshen the foundation by dipping it in warm water just before using it.—Ed.]

No Signs of Disease.—Gotlieb Hoffman, Symerton, ♂ Ills., on Feb. 27, 1886, says :

My bees are thus far wintering nicely, both those in the cellar and those on the summer stands packed with chaff. They had a fine flight a few days ago, and there is no sign of disease.

Reversible Frames.—B. Losee, Cobourg, Ont., on Feb. 22, 1886, says :

Mr. T. C. Davies, on page 107, says that he is interested in a reversible-frame bee-hive. I have used mine during the last 15 years, being hollow walled, formed by wide standing-frames, half-inch rods, top and bottom reversible, with perforated metal divisions for producing honey in sections, arranged to be moved without disturbing the sections in the crates above.

Bees Packed in Sawdust.—J. R. Nichols, Danville, ♂ Ind., on March 2, 1886, says :

My 56 colonies of bees are wintering nicely, one-half of them being in the cellar, and the balance packed in sawdust on the summer stands. It looks now as though they would get through the winter without the loss of a single colony.

Bees in Good Condition.—F. M. Taintor, Coleraine, ♀ Mass., on March 1, 1886, says :

Bees in this locality appear to be wintering finely. Mine were never in better condition than at present. I placed them in the cellar on Nov. 16, 1885, and since then they have been very quiet, with the thermometer at 45°. The weather this winter has

been very favorable for bees out-of-doors. We have had only 2 weeks of extreme cold weather this winter. I look forward with pleasure to the time I place them on the summer stands. I look forward with pleasure to Friday when I always get the AMERICAN BEE JOURNAL. Of the several bee-papers printed, the old "American" stands pre-eminently at the head, in my opinion, and now as the price has been reduced to one dollar a year, no bee-keeper can afford to do without it.

Managing Prime Swarms.—O. P. Miner, Taylor Centre, N. Y., on Feb. 27, 1886, asks the following:

Would the following be a good way to manage a prime swarm in a Langstroth hive, for comb honey? Have them on 7 brood-frames and 2 wide frames filled with sections—one on each side of the brood-nest; when sections are nearly filled, place them on top of the brood with others and replace them with brood-frames. In replacing should they be placed in the spaces made vacant by the wide frames, or spread the frames and place them in the centre of the brood?

[Yes; that plan will work nicely. Place an empty brood-frame between two full ones; but it would be very advantageous to fill the empty frames with comb foundation.—Ed.]

Feeding Bees in the Cellar.—A. B. Howe, Council Bluffs, Iowa, on Feb. 26, 1886, writes:

Bees are wintering exceedingly well in this part of the country. I have about 20 colonies nicely put away in the cellar, and about as many more on the summer stands in chaff hives. I examined all of them a day or two ago, and found all in very fine condition. I have commenced feeding those in the cellar to get early brood. I feed about two spoonfuls of extracted honey or sugar syrup at the entrance every evening. In a very few days the bees can be trained to come down to the entrance and take the honey. We have had very fine weather for bees this week; they could have a flight almost every day. I look for a good honey crop in this locality this year.

Convention Notices.

The Union Bee-Keepers' Association of Western Iowa will meet in Dexter, Iowa, on April 10, 1886, at 10 a.m. M. E. DABBY, Sec.

A cordial invitation is extended to all to attend the 8th annual meeting of the Texas State Bee-Keepers' Association, to be held at Judge W. H. Andrews' bee-farm, at McKinney, Tex., on May 5 and 6, 1886. Indications for a grand meeting grow brighter every day, and every effort will be made to render this meeting the best and largest ever held in the State. No hotel bills to pay. B. F. CARROLL, Sec.

The semi-annual meeting of the Western Bee-Keepers' Association will be held in Kansas City, Mo., on Apr. 29 and 30, 1886. It is desired that this meeting shall be better than any of its predecessors. Essays will be read on the leading subjects in bee-culture, which will be announced as soon as arrangements are completed. Let all who have bees, queens, fixtures, etc., bring them if possible. Due notice will be given in regard to a hall. P. BALDWIN, Sec.

Honey and Beeswax Market.

Office of the AMERICAN BEE JOURNAL,
Monday, 10 a. m., Mar. 8, 1886.

The following are the latest quotations for honey and beeswax received up to this hour:

CHICAGO.

HONEY.—Sales have been quite good this month for best grades of comb honey, some bringing 16c. per pound when in perfect order. There is a light supply here, and now is a favorable time to forward shipments. Extracted honey brings 6@8c. BEESWAX.—25@28c. per lb.

R. A. BURNETT, 161 South Water St.

NEW YORK.

HONEY.—We note an improvement of sales of honey the past week, but prices continue to rule low. We quote as follows: Fancy white comb in 1-lb. paper cartons, 13@14c.; the same in 1-lb. glassed or unglazed sections, 12@13c.; the same in 2-lb. glassed sections, 9@10c., and fair to good in glassed 2-lbs., 8@9c. Fancy buckwheat honey in 1-lb. unglazed sections, 10c.; the same in 2-lb. sections, glassed, 8@9c. Extracted, white, 6@7c.; buckwheat, 5@6c.

BEESWAX.—27@28c.

MCCAUL & HILDBRETH BROS., 34 Hudson St.

ST. LOUIS.

HONEY.—The market is quiet and the demand light just now. We quote prices as follows: Choice comb honey, 10@12c. Extracted, in barrels, 4@5c. Extra fancy of bright color and in No. 1 packages, 1¢ advance on above prices. BEESWAX.—Firm at 22@24c. for prime.

D. G. TUTT & CO., Commercial St.

CINCINNATI.

HONEY.—There is no speculation whatever in the market, and the demand is slow for extracted honey from manufacturers, while it is fair for honey in glass jars, for table use. Demand for comb honey is slow and the market is well supplied with all kinds. Extracted honey brings 4@5c., and choice comb honey brings 12@15c. in a jobbing way. BEESWAX.—The home demand is good, while arrivals are slow. We pay 25@27c. for good yellow to choice.

C. F. MUTH & SON, Freeman & Central Ave.

CLEVELAND.

HONEY.—There is a great improvement in the demand of best 1-lb. sections since our last report, and all receipts are finding ready sale at 14 cents, with occasional sale of single crates at 15 cents. Two-lbs. are neglected, very little wanted at 13c. Old honey, 12@11 cts. and slow. Extracted, 7@8c. BEESWAX.—Scarce at 25c.

A. C. KENDEL, 115 Ontario Street.

KANSAS CITY.

HONEY.—Sales are improving and we have a good trade in comb, although prices are not as firm, owing to good prospects in California for a large crop having reduced their prices about 2 cts. We quote as follows: Choice comb in 1-lb. sections, 16c.; fair to dark, 12@14c.; in 2-lb. sections, 12@14 cts. Extracted is dull and slow. Dark brings 3 1/2 to 4c.; white, 6@7c.

BEESWAX.—23c.

CLEMONS, CLOON & Co., cor. 4th & Walnut.

BOSTON.

HONEY.—The sale for honey for the past month has been as light as we have ever known it, and prices are weak. One-pound, white clover, 13@15c.; 2-pound sections, 11@13c. Extracted, 6@8c.

BEESWAX.—30 cts. per lb.

BLAKE & RIPLEY, 57 Chatham Street.

SAN FRANCISCO.

HONEY.—The market is very dull. We quote as follows: White and extra white comb, 11@13c.; dark comb, 6@8c. White extracted, 5@5 1/2c.; amber, 4@4 1/2c.; dark and candied, 3 1/2@4c.

BEESWAX.—Quotable at 23@25c., wholesale.

O. B. SMITH & Co., 423 Front Street.

DETROIT.

HONEY.—The market is very dull. Best white in 1-lb. sections, 14c. There is considerable in commission houses and prices are liable to be lower.

BEESWAX.—It is in good demand at 25@28c.

M. H. HUNT, Bell Branch, Mich.

Convention Notice.

The Illinois Central Bee-Keepers' Association will hold its next meeting at Mt. Sterling, Ill., on Tuesday and Wednesday, Oct. 19 and 20, 1886.

J. M. HAMBAUGH, Sec.

The next meeting of the Patalazaga Bee-Keepers' Association will be held at Arcadia, Ala., on March 20, 1886.

M. G. RUSHTON, Sec.

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861
Issued every Wednesday by
THOMAS G. NEWMAN & SON,
PROPRIETORS,
923 & 925 WEST MADISON ST., CHICAGO, ILL.
At One Dollar a Year.

ALFRED H. NEWMAN,
BUSINESS MANAGER.

Special Notices.

To Correspondents.—It would save us much trouble, if all would be particular to give their P. O. address and name, when writing to this office. We have several letters (some inclosing money) that have no name; many others having no Post-Office, County or State. Also, if you live near one post-office and get your mail at another, be sure to give the address we have on our list.

Perforated-Zinc.—We have laid in a stock of perforated zinc, for excluding drones and queens, and can fill orders for any size of pieces or quantity at 15 cents per square foot, or in full sheets 3x8 feet at \$2.75 per sheet. We also have pieces cut to fit the Langstroth hive—19 1/4 x 14 1/4—Price 25 cents each.

Beeswax Wanted.—We are now paying 24 cents per pound for good, average, yellow Beeswax, delivered here. Cash on arrival. Shipments are solicited. The name of the shipper should be put on every package to prevent mistakes.

Our New Catalogue of Bee-Keepers' Supplies for 1886 is issued, and will be sent to any one desiring a copy. Send name and address, plainly written, on a Postal Card for it.

Wire Nails have advanced in price, as will be seen by quotations on page 159, last column.

The Western World Guide and Hand-Book of Useful Information, contains the greatest amount of useful information ever put together in such a cheap form. The printing, paper, and binding are excellent, and the book is well worth a dollar. To any one sending us two new subscribers besides their own, with \$3, for one year, we will present a copy of this valuable book.

To any One sending us one new subscriber with their own renewal (with \$2.00), we will present a copy of the new "Convention History of America."

Are you Entitled to a pension? You may be and may not know it. If you examine the Guide and Hand-Book you will soon find out. Thousands of things worth knowing will be found in it. The BEE JOURNAL for 1886 and the Guide Book will both be sent for \$1.30.

Preserve your papers for reference. If you have no BINDER we will mail you one for 75 cents, or you can have one FREE if you will send us 4 new yearly subscriptions for the BEE JOURNAL.

Golden Rules for successful advertising, are these: 1. Attractive display. 2. Sufficient points clearly stated. 3. Repetition. Don't spend all your money in one insertion. 4. Choice of the Paper which reaches the people you want to reach. These rules never fail.

The Guide and Hand-Book, is a book of ready reference and an encyclopedia of everything desirable to know. As a guide to the home-seeker, it is invaluable. Its contents are partially given on page 160, and will convince any one of its value. We do not think any of our readers can afford to do without it. As a book of ready reference we find it of great value in our library. We will send the **Weekly BEE JOURNAL** for a year and the **Guide** for \$1.30

Sample Copies of the **BEE JOURNAL** will be sent **FREE** upon application. Any one intending to get up a club can have sample copies sent to the persons they desire to interview by sending the names to this office, or we will send them all to the agent.

Advertisements.

FOR SALE.

APIARY 120 ft. long, 50 colonies arranged for comb honey—Simplicity style. Dwelling-house new, barn, poultry-houses, 30 acres arable land, board and wire fence, and 50 acres woodland; on the hills 1 mile from centre of Yazoo City, Miss. There are 2 acres of strawberries and about 900 young fruit trees (200 bearing), springs of running water, &c. Good fruit and bee country. Farm and Apiary at the low price of \$2,500—one-half cash, balance in 1 year. If you want a bargain, at once address, "WIEDWOOD PLACE," YAZOO CITY, MISS.

COMB FOUNDATION.

BROOD FOUNDATION 38 cents per pound. Thin foundation 48 cents per pound. Other Supplies cheap. Send for our Price-List at once.

KENNEDY & LEAHY,
10A1t HIGGINSVILLE, Lafayette Co., Mo.

Dadant's Foundation Factory, wholesale and retail. See Advertisement in another column.

Good News for Dixie!

SIMPLICITY HIVES,
Sections, Extractors, Smokers, Separators, &c., of Root's Manufacture, shipped from here at his prices.

Also S. hives of Southern yellow pine, and Bee-Keepers' Supplies in general. Price List Free. **J. M. JENKINS,**
8A4t Wetumpka, Ala.

SEND FOR IT.

We have just issued a new **Circular** that will interest any bee-keeper. Send your name on a postal card for it. Cash paid for Beeswax.

A. B. HOWE,
8A4t COUNCIL BLUFFS, IOWA.

Dadant's Foundation Factory, wholesale and retail. See Advertisement in another column.

BEE SWAX.

We pay \$4.00 per lb., delivered here, for yellow Beeswax. To avoid mistakes, the shipper's name should always be on each package.

THOS. G. NEWMAN & SON,
923 & 925 West Madison Street. CHICAGO, ILL.

Italian Bees in Iowa.

60 CENTS to \$1 per lb.; **QUEENS**, 30 cents to \$2.50. **NUCLEI** and **COLONIES**. Order from my new Circular.

OLIVER FOSTER,
10A4t MT. VERNON, Linn Co., IOWA.

The NEW Heddon Hive.

We have made arrangements with the inventor by which we shall make and sell the **Heddon Reversible Hive**, both at wholesale and retail; nailed and also in the flat.



The engraving gives a good idea of the hive. The brood-chamber is in two sections; also the surplus arrangement, which may be interchanged or inverted at will. The cover, bottom-board, and top and bottom of each sectional case has one-half of a regular bee-space, so that the surplus cases with the sections, may be placed between the two brood-chambers, or the latter may be transposed or inverted—in fact, all parts of this hive are perfectly interchangeable. The brood-frames will ALL be bored for wires.

A **SAMPLE HIVE** includes the bottom-board and stand; a slatted honey-board, and cover; two 6-inch brood-chambers, each containing 8 frames; two surplus arrangements, each containing 28 one-pound sections, one with wide frames and separators, and the other without separators. This latter chamber can be interchanged with the other stories, but cannot be reversed. It is **NAILED AND PAINTED**, and ready for immediate use. Price, \$4.00, complete.

It is absolutely essential to order one nailed hive as a pattern for putting those in the flat together correctly.

HIVES READY TO NAIL.—In filling orders for these hives, in the flat, we make 6 different combinations, so that our customers may make a selection from the sample nailed hive, without waiting for us to quote prices, and the different kinds will be known by the following numbers:

No. 1 consists of the stand, bottom-board, cover, two 6-inch brood-chambers, 16 frames, and the slatted honey-board. Price, \$1.55 each.

No. 2 is the same as No. 1, with the addition of one surplus story containing 28 sections without separators—interchangeable, but not reversible. Price, \$2.00 each.

No. 3 is the same as No. 2, with two surplus stories as therein described. Price, \$2.50 each.

No. 4 is the same as No. 1, with the addition of one surplus story containing 28 sections in wide frames with separators, which can be reversed, inverted, and interchanged, the same as the brood-chambers. Price, \$2.50 each.

No. 5 is the same as No. 4, with two surplus arrangements as therein described. Price, \$3.00.

No. 6 contains all the parts as described in the sample nailed hive. Price, \$3.75 each.

Those desiring the hives without the stand, honey-board or sections, may make the following deductions from the above prices: Stand, 14 cents; honey-board, 8 cents; and the 28 or 56 sections, as the case may be, at 1/4 cent each, respectively.

We will also make the following deductions on quantities ordered all at one time: For 10 or more hives, 5 per cent. discount; for 25 or more hives, 7 1/2 per cent.; for 50 or more, 10 per cent.

THOMAS G. NEWMAN & SON,
923 & 925 West Madison-St., CHICAGO, ILL.

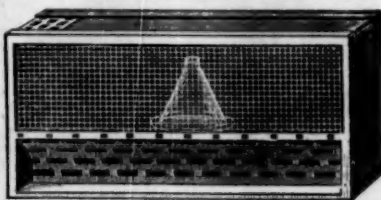
CLARK'S BEE-KEEPERS' DIARY.

THREE cents only. Price-List of Supplies, Bees, Italian and Carniolan Queens, free. Send for them now. **J. W. CLARK,** (box 34),
10A1t CLARKSBURG, Montauk Co., Mo.

MY 650 Colonies of bees are more than I can well handle, so I will sell for spring delivery 100 full colonies, \$5.00 each for hybrids and \$6.00 for pure Italians. Discount on larger numbers. I will also sell a few colonies of Caucasian bees, which breed I imported from the Caucasus Mountains, Asia, in 1880, and have proved to me of great value. Address,

JULIUS HOFFMAN,
CANAJOHARIE, Montg. Co., N. Y.
Formerly Fort Plain, N. Y. 9A3t

Alley's Drone and Queen Trap.



Price, by Express, 50 cts.; by mail, 65 cts.; 12 in the flat, and one nailed (13 in all), \$3.50; 50, in the flat, \$12.00. Address,

THOS. G. NEWMAN & SON,
923 & 925 West Madison St., CHICAGO, ILL.

60 New Style, Embossed Hidden Name and Chromo Visiting Cards, no 2 alike, name on, 10c., 13 packs \$1; warranted best sold. Sample book, 4c. **L. JONES & CO.,** Nassau, N. Y.

Dadant's Foundation Factory, wholesale and retail. See Advertisement in another column.

Bee-Hives, Honey-Boxes, Sections.

Largest Bee-Hive Factory in the World.

Capacity, one car-load per day. Best of goods at lowest prices. Write for price-list.

C. B. LEWIS & CO.
51A1t. WATERTOWN, WIS.

GREEN'S FRUIT GROWER and 100-page **FRUIT GUIDE** free, or 3 different copies of our paper and Catalogue with 5 colored plates for 10 cents. Address, Green's Nursery Co., Rochester, N. Y. **How to Propagate and GROW FRUIT** is a new book of 160 pages, 75 illustrations and colored plate.—"It has saved me \$50." **R. L. F.**—Price, 50 cts. 9A8t

SEE SHUCK'S ADVERTISEMENT IN ANOTHER COLUMN.

Italian Bees and Comb Foundation.

50 to 100 COLONIES of very choice Italian Bees for spring delivery. Prices greatly reduced. Nuclei, Queens, and Bees by the pound for the season.

COMB FOUNDATION FOR SALE.

Wax made up by the lb. or worked for a share of the wax. Samples of foundation free. Price-List ready.

O. H. TOWNSEND,
10Etf ALAMO, Kalamazoo Co., MICH.

Dadant's Foundation Factory, wholesale and retail. See Advertisement in another column.

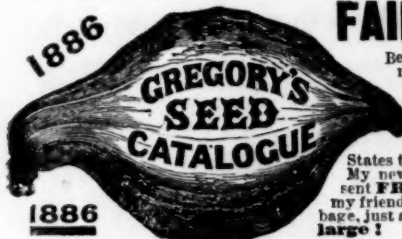


SEND 65 CENTS

and get by return mail one of our

Improved Drone and Queen Traps.

We have attached to the Trap a simple device, so in case the bees swarm while the apiarist is absent, the queen and bees can return to the parent hive. Send the amount in postage stamps. Circulars now ready.
11Etf **Henry Alley & Co.,** Wenham, Mass.



FAIR AND SQUARE DEALING.

Believing that if a man has dealt squarely with his fellow-men his patrons are his best advertisers, I invite all to make inquiry of the character of my seeds among over a million of Farmers, Gardeners and Planters who have used them during the past thirty years. Raising a large portion of the seed sold, (few seedsmen raise the seed they sell) I was the first seedsman in the United States to warrant (as per catalogue) their purity and freshness. My new Vegetable and Flower Seed Catalogue for 1886 will be sent **FREE** to all who write for it. Among an immense variety, my friends will find in it (and in none other) a new drumhead Cabbage, just about as early as Henderson's, but nearly twice as large! **James J. H. Gregory, Marblehead, Mass.**



4B4t

EVERGREENS

and European Larches; all sizes. All Nursery grown at prices never before offered. Norway Spruce, Scotch, Austrian, White and Mountain Pines, Balsam Fir, Northern Red Cedar, and Arbor Vitae from \$3. per 1,000 up Shipped with safety to all parts of the U.S. Price list free. **D. HILL, Evergreen Specialist, Danville, Ill.**



1E6t

Western BEE-KEEPERS' Supply House.

We manufacture Bee-Keepers' supplies of all kinds, best quality at lowest prices. Hives, Sections, Comb Foundation, Extractors, Smokers, Crates, Honey Buckets, Vials, Feeders, Bee-Literature, etc., etc. Imported Italian Queens, Italian Queens, Bees by the lb., Nucleus or Colony. "Bee-Keepers' Guide, Memoranda and Illustrated Catalogue" of 48 pages **FREE** to Bee-Keepers. Address **JOSEPH NYSEWANDER, DES MOINES, IOWA.**

MAKE YOUR OWN FERTILIZERS.

Where to get the materials in the cheapest form; how to make up formulas for different crops; seven ways to make plant food or bones, ground and whole; all about fish for manure and where to get them, and wood ashes, &c., &c. A book of 120 pages, crowded with valuable information, all given in the plain, common sense way farmers can understand. By mail 40 cts. Also books on Onion, Squash, Cabbage, and Carrot and Mangold raising, at 30 cents each, or the five for \$1.35 by mail. Two of these have been through 10 and 15 editions. **My large Seed Catalogue free to all who write for it.**

JAMES J. H. GREGORY, MARBLEHEAD, MASS.

JONES' FRAME-PLYERS.



FOR taking frames out of hives, or moving them in any way desired. It is made of galvanized iron, and can be utilized in many ways. It has a long claw for loosening frames, and a hook which may be used for carrying other frames besides the one held by the Pliers. Price, 40 cts., by mail.

THOS. G. NEWMAN & SON, 923 & 925 West Madison St., CHICAGO, ILL.

SEE SHUCK'S ADVERTISEMENT IN ANOTHER COLUMN.

BEE Hives and Sections—Send to **HERR & BEULE**, manufacturers, Beaver Dam, Wis., for price lists. Good materials. Low prices. 10A26t

Dadant's Foundation Factory, wholesale and retail. See Advertisement in another column.

Muth's Honey Extractor,

Perfection Cold-Blast Smoker, SQUARE GLASS HONEY-JARS, etc.

For Circulars, apply to **CHAS. F. MUTH & SON, Freeman & Central Ave., CINCINNATI, O.** P.S.—Send 10c. for Practical Hints to Bee-Keepers

FIRST IN THE FIELD!
THE INVERTIBLE HIVE!
INVERTIBLE FRAMES,
Invertible Surplus Honey Cases, Entrance Feeders, Top and Bottom Feeders, Hive-Lifting Device, Honey Extractors, Wax Extractors, Comb Foundation, etc.
My new Illustrated Catalogue is now ready, and will be mailed to all who may apply for it. Address, **J. M. SHUCK, Des Moines, Iowa.**



Bingham Smokers

AND HONEY-KNIVES.

Send for Circulars.

Bingham & Hetherington, ABRONIA, MICH.

Yes,

IF you want 2-Simplicity-frame Nuclei shipped about June 10, in strong condition, with about 1 lb. of bees and an untested Italian queen, for \$2.00, you must engage them by March 20; then I will ship goods by the above date, for cash on safe arrival. Also, Bees per lb. cheap, about June 1. As I am an experienced queen-breeder, I will mail you such queens as I would be willing to risk in my own apiary. Inquiries will cheerfully be answered. Address, **IRA D. ALDERMAN, 10A1t TAYLOR'S BRIDGE, Sampson Co., N. C.**

SECTIONS.

Job Lot—Cheap!

We have received a Job Lot of 25,000 One-Piece Sections with square groove, which we will close out at \$4.00 per 1,000, or \$2.50 for 500. The size is: top and bottom, 6 inches; sides, 5 1/4 inch; width of section, 1 1/4 inches—narrow tops.

THOS. G. NEWMAN & SON, 923 & 925 West Madison St., CHICAGO, ILL.

Given's Foundation Press

THE GIVEN PRESS stands in the front rank for manufacturing **FOUNDATION** in **Wired Frames**, as well as foundation for **SECTIONS**. Without a dissenting voice, all of our customers affirm its superiority.

Send for Circulars and Samples.

J. R. CALDWELL & CO.,

1A1t **HOOPESTON, Vermillion Co., ILL.**

BEES, bee-hives, imported queens—first-class—cheap. **OTIS N. BALDWIN, Clarksville, Mo.** 4A1y

(ESTABLISHED 1864.)

BEE-SUPPLIES.

Wholesale and Retail. We furnish **EVERYTHING** needed in the apiary, of practical construction, and at the **lowest price**. Satisfaction guaranteed. Send your address on a Postal card, and we will send you our Illustrated Catalogue free. **E. KETCHMER, 6A8t 14CM COBURG, Montgomery Co., IOWA.**

THE BRITISH BEE JOURNAL

AND BEE-KEEPER'S ADVISER.

The **BRITISH BEE JOURNAL** is published every week, at Ten Shillings and 10d. per annum, and contains the best practical information for the time being, showing what to do, and when and how to do it. It is edited by T. W. Cowan, Esq.

The **British Bee Journal** and the **AMERICAN BEE JOURNAL**, one year, for \$3.50.

Fruit-Farm & Apiary

FOR SALE CHEAP!

96 ACRES, hill-land, 3 1/2 well-stocked with apples, peaches, pears, plums, quinces, grapes, and small fruit, in fine bearing condition. The remainder is in pasture, grass, grain, etc. Apiary contains **140 ITALIAN COLONIES** in Langstroth hives. Bee-house and all modern appliances for apiculture, in as good location for bees and honey as can be found. Good 10-room house, beautifully located, commanding a view of the city, river and surrounding country. New barn and out-buildings, cistern, never-failing springs, etc. Reasons for selling—age and ill-health.

1A1t **S. A. STILLMAN, LOUISIANA, MO.**

Vandervort Comb Fdn. Mills,

Send for Samples & Reduced Price-List. Atf **J. VANDERVORT, Laceyville, Pa.**

BEE-KEEPERS' GUIDE;

Or, MANUAL OF THE APIARY.

12,000 SOLD SINCE 1876.

13th Thousand Just Out!

10th Thousand Sold in Just Four Months! 4,000 Sold Since May, 1883.

More than 50 pages, and more than 50 fine illustrations were added in the 8th edition. The whole work has been thoroughly revised, and contains the very latest in respect to bee-keeping. It is certainly the fullest and most scientific work treating of bees in the World. Price, by mail, **\$1.25**. Liberal discount to dealers and to clubs.

A. J. COOK, Author and Publisher, Agricultural College, Mich.

1A1y

FLAT-BOTTOM COMB FOUNDATION.



high side-walls, 4 to 16 square feet to the pound. Circular and samples free

J. VAN DEUSEN & SONS, Sole Manufacturers, Sprout Brook, Mont. Co., N. Y.